

ENHANCEMENT OF MAGNETIC MEDIA RECORDING PERFORMANCE USING ION IRRADIATION TO TAILOR EXCHANGE COUPLING

ABSTRACT OF THE DISCLOSURE

Magnetic medium recording performance can be enhanced by irradiating a magnetic medium with ions having an acceleration voltage of between 10 keV and 100 keV to induce exchange coupling between grains of the magnetic medium. The magnetic medium is exposed to a cumulative ion dosage of between 10^{13} ions/cm² and 10^{17} ions/cm² using a non-patterned exposure of the magnetic medium. The ions can be selected from the group consisting of H⁺, He⁺, Ne⁺, Ar⁺, Kr⁺, and Xe⁺. Alternatively, the ions can be selected from the group consisting of Ga⁺, Hg⁺, and In⁺.